

Title (en)  
METHOD AND DEVICE FOR ANALYSING AN IMAGE

Title (de)  
VERFAHREN UND VORRICHTUNG ZUR ANALYSE EINES BILDES

Title (fr)  
PROCÉDÉ ET DISPOSITIF D'ANALYSE D'UNE IMAGE

Publication  
**EP 3185758 A4 20181024 (EN)**

Application  
**EP 15836149 A 20150825**

Priority  
• SG 10201405182W A 20140825  
• SG 2015050278 W 20150825

Abstract (en)  
[origin: US2017231550A1] A method for analysing an image of a lesion on the skin of a subject including (a) identifying the lesion in the image by differentiating the lesion from the skin; (b) segmenting the image; and (c) selecting a feature of the image and comparing the selected feature to a library of predetermined parameters of the feature. The feature of the lesion belongs to any one selected from the group: colour, border, asymmetry and texture of the image.

IPC 8 full level  
**A61B 5/00** (2006.01); **G06K 9/32** (2006.01); **G06K 9/38** (2006.01); **G06K 9/46** (2006.01); **G06K 9/48** (2006.01); **G06V 10/25** (2022.01); **G06V 10/28** (2022.01); **G06V 10/46** (2022.01); **G06V 10/56** (2022.01)

CPC (source: EP US)  
**A61B 5/0077** (2013.01 - EP US); **A61B 5/1032** (2013.01 - EP US); **A61B 5/444** (2013.01 - EP US); **A61B 5/6898** (2013.01 - EP US); **A61B 5/726** (2013.01 - EP US); **A61B 5/7264** (2013.01 - EP US); **G06T 7/0012** (2013.01 - EP US); **G06T 7/11** (2016.12 - EP US); **G06T 7/90** (2016.12 - EP US); **G06V 10/25** (2022.01 - EP US); **G06V 10/28** (2022.01 - EP US); **G06V 10/46** (2022.01 - EP US); **G06V 10/56** (2022.01 - EP US); **G06T 2207/10024** (2013.01 - EP US); **G06T 2207/20016** (2013.01 - EP US); **G06T 2207/20021** (2013.01 - EP US); **G06T 2207/30088** (2013.01 - EP US); **G06T 2207/30096** (2013.01 - US); **G06V 2201/032** (2022.01 - EP US); **G16H 50/20** (2017.12 - EP)

Citation (search report)  
• [XDYI] GANSTER HARALD ET AL: "Automated Melanoma Recognition", IEEE TRANSACTIONS ON MEDICAL IMAGING, IEEE SERVICE CENTER, PISCATAWAY, NJ, US, vol. 20, no. 3, 1 March 2001 (2001-03-01), pages 233 - 239, XP011036071, ISSN: 0278-0062, DOI: 10.1109/42.918473  
• [IY] GAO J ET AL: "A novel multiresolution color image segmentation technique and its application to dermatoscopic image segmentation", IMAGE PROCESSING, 2000. PROCEEDINGS. 2000 INTERNATIONAL CONFERENCE ON SEPTEMBER 10-13, 2000, IEEE, PISCATAWAY, NJ, USA, vol. 3, 10 September 2000 (2000-09-10), pages 408 - 411, XP010529490, ISBN: 978-0-7803-6297-0  
• [YP] DO THANH-TOAN ET AL: "Early melanoma diagnosis with mobile imaging", 2014 36TH ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY, IEEE, 26 August 2014 (2014-08-26), pages 6752 - 6757, XP032675283, DOI: 10.1109/EMBC.2014.6945178 & THANH-TOAN DO ET AL: "Early Melanoma Diagnosis with Mobile Imaging: slides", 26 August 2014 (2014-08-26), XP055461273, Retrieved from the Internet <URL:https://www.dropbox.com/s/zvb17h1r7bob8u0/embc-2014.pdf?dl=0> [retrieved on 20180320]  
• [Y] MUNOZ X ET AL: "Strategies for image segmentation combining region and boundary information", PATTERN RECOGNITION LETT, ELSEVIER, AMSTERDAM, NL, vol. 24, no. 1-3, 1 January 2003 (2003-01-01), pages 375 - 392, XP004391184, ISSN: 0167-8655, DOI: 10.1016/S0167-8655(02)00262-3  
• [Y] SCHROETER P ET AL: "Hierarchical image segmentation by multi-dimensional clustering and orientation-adaptive boundary refinement", PATTERN RECOGNITION, ELSEVIER, GB, vol. 28, no. 5, 1 May 1995 (1995-05-01), pages 695 - 709, XP004011495, ISSN: 0031-3203, DOI: 10.1016/0031-3203(94)00133-7  
• [Y] B BASAVAPRASAD ET AL: "A Survey on Traditional and Graph Theoretical Techniques for Image Segmentation", IJCA PROCEEDINGS ON NATIONAL CONFERENCE ON RECENT ADVANCES IN INFORMATION TECHNOLOGY, 1 February 2014 (2014-02-01), pages 38 - 46, XP055461265  
• [Y] MOHAMED HIND ROSTOM ET AL: "Contour with Connected Components and Mesh Surface for Skin Image Segmentation", INTERNATIONAL JOURNAL OF APPLIED INFORMATION SYSTEMS, vol. 6, no. 2, 1 September 2013 (2013-09-01), pages 48 - 52, XP055506913  
• [XI] NGAI-MAN CHEUNG ET AL: "Mobile Imaging System for Early Diagnosis of Skin Cancer - IEEE Life Sciences", 1 January 2014 (2014-01-01), XP055506939, Retrieved from the Internet <URL:http://lifesciences.ieee.org/lifesciences-newsletter/2014/january-2014/mobile-imaging-system-for-early-diagnosis-of-skin-cancer/> [retrieved on 20180913]  
• [A] KIRAN RAMLAKHAN ET AL: "A Mobile Automated Skin Lesion Classification System", TOOLS WITH ARTIFICIAL INTELLIGENCE (ICTAI), 2011 23RD IEEE INTERNATIONAL CONFERENCE ON, IEEE, 7 November 2011 (2011-11-07), pages 138 - 141, XP032074554, ISBN: 978-1-4577-2068-0, DOI: 10.1109/ICTAI.2011.29  
• [A] CELEBI ET AL: "A methodological approach to the classification of dermoscopy images", COMPUTERIZED MEDICAL IMAGING AND GRAPHICS, PERGAMON PRESS, NEW YORK, NY, US, vol. 31, no. 6, 13 July 2007 (2007-07-13), pages 362 - 373, XP022152532, ISSN: 0895-6111, DOI: 10.1016/J.COMPMEDIMAG.2007.01.003  
• See references of WO 2016032398A2

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2016032398 A2 20160303**; AU 2015307296 A1 20170323; AU 2015307296 B2 20200521; EP 3185758 A2 20170705; EP 3185758 A4 20181024; SG 10201405182W A 20160330; SG 10201901655Q A 20190328; SG 11201701478S A 20170330; US 10499845 B2 20191210; US 2017231550 A1 20170817

DOCDB simple family (application)  
**SG 2015050278 W 20150825**; AU 2015307296 A 20150825; EP 15836149 A 20150825; SG 10201405182W A 20140825; SG 10201901655Q A 20150825; SG 11201701478S A 20150825; US 201515507107 A 20150825